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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,234	01/16/2002	Duc Chau	40013.003	9589
27966	7590	01/29/2004	EXAMINER	
KENNETH E. HORTON KIRTON & MCCONKLE 60 EAST SOUTH TEMPLE SUITE 1800 SALT LAKE CITY, UT 84111			GARCIA, JOANNIE A	
			ART UNIT	PAPER NUMBER
			2823	
DATE MAILED: 01/29/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/052,234	CHAU ET AL.	
	Examiner	Art Unit	
	Joannie A Garcia	2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 21-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,6,12-17,21,22 and 24 is/are rejected.
- 7) ☒ Claim(s) 3,4,7-11 and 23 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: _____ |

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "32" and "35" have both been used to designate implant region right next to termination junction 20, in Figures 11-14. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 12-17, and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 12 and 24, recite the limitation "portion of the substrate not containing the nitride-containing layer" in lines 4-5, and 5-6, respectively. There is insufficient antecedent basis for this limitation in the claim.

In claim 14, line 1, "polysilicon" should be preceded by --a--, and, --layer-- should be preceded by "polysilicon".

Claims 6, 12, and 16, are rejected under 35 U.S.C. 102(e) as being anticipated by Divakaruni et al (2002/014907 A1).

The rejection is maintained as stated in the Office Action mailed 07-23-03, and as stated below.

Applicant argues that Divakaruni et al does not teach forming an oxide layer on a bottom of a trench. However, Divakaruni et al discloses providing a stacked silicon nitride/silicon oxide layer 20 on a bottom and sidewall of trench 16 (Figure 1C, and Paragraphs 0007, and 0008), and therefore, achieving formation of an oxide on a bottom of a trench.

Claims 1, 2, 5, 12, 14, 15, 17, 21, and 24, are rejected under 35 U.S.C. 102(b) as being anticipated by Baliga (U.S. Patent 5,998,833).

The rejection is maintained as stated in the Office Action mailed 07-23-03, and as stated below.

Applicant argues that Baliga does not teach forming an oxide layer on a bottom of a trench. However, Baliga discloses formation of a trench in Figure 4F, which is followed by formation of oxide layer 28 on a bottom and sidewall of said trench (Figure 4G), and therefore, achieving formation of an oxide layer on a bottom of a trench.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baliga as applied to claims 1, 2, 5, 12, 14, 15, 17, 21, and 24 above, and further in view of the following comments.

The rejection is maintained as stated in the Office Action mailed 07-23-03, and as stated above.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baliga (U.S. Patent 5,998,833), in combination with Divakaruni et al (2002/0149047 A1).

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The rejection is maintained as stated in the Office Action mailed 07-23-03, and as stated above.

Claims 3, 4, 7-11, and 23 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956 until 2/4/04. See MPEP 203.08.

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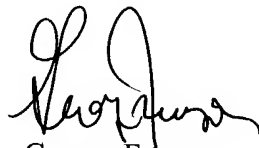
Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Joannie Adelle García whose telephone number is (703) 306-5733 until 2/4/04, and (571) 272-1861 thereafter. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri, can be reached on (703) 306-2794 until 2/4/04 and (571) 272-1855 thereafter. The fax number for this group is 703-872-9306 for before final submissions, 703-872-9306 for after final submissions and the customer service number for group 2800 is (703) 306-3329. Updates can be found at <http://www.uspto.gov/web/info/2800.htm>.



JAG
January 9, 2004

George Fourson
Primary Examiner
Art Unit 2823
308-2544



George Fourson
Primary Examiner
Art Unit 2823